

International Climate Network Working Group (ICNWG)

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With Contributions from

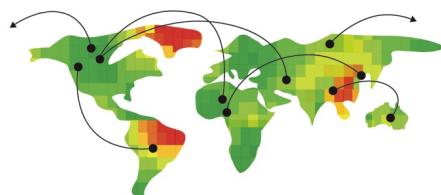
Mary Hester (Esnet), Eli Dart (Esnet), Gerald Vogt (DKRZ),
Dean Williams (AIMS/LLNL)

GO-ESSP Workshop February 2015,
Abingdon

Deutsches Klimarechenzentrum (DKRZ)

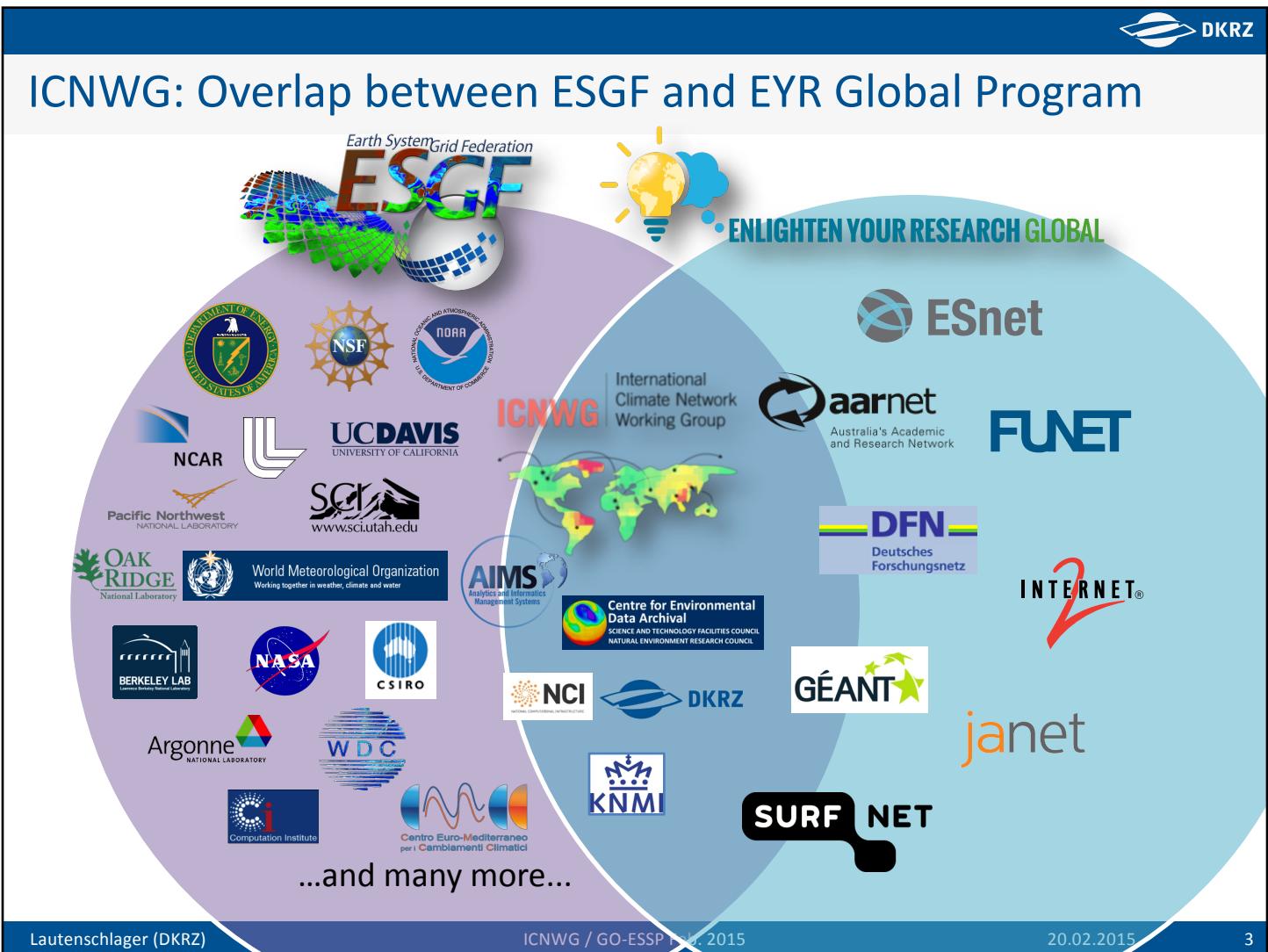
Purpose and Goals

ICNWG | International Climate Network Working Group



- International Climate Network Working Group
 - ESGF working group
 - Currently congruent with EYR-Global award
 - <http://icnwg.llnl.gov/>
- Purpose: improve data transfer performance between major climate data facilities
 - Current tools (http/wget) won't scale to CMIP6 data volumes
 - Technologies exist to significantly improve performance
 - Science DMZ
 - Globus
- Near-term goals – replication workflow using GridFTP
 - 500MB/sec network performance by May 2014
 - 500MB/sec (4Gbps) disk to disk transfer by August 2014
- Longer-term goals
 - 1GB/sec (8Gbps) disk to disk by August 2015
 - 2GB/sec (16Gbps) disk to disk by June 2016 (stretch goal)

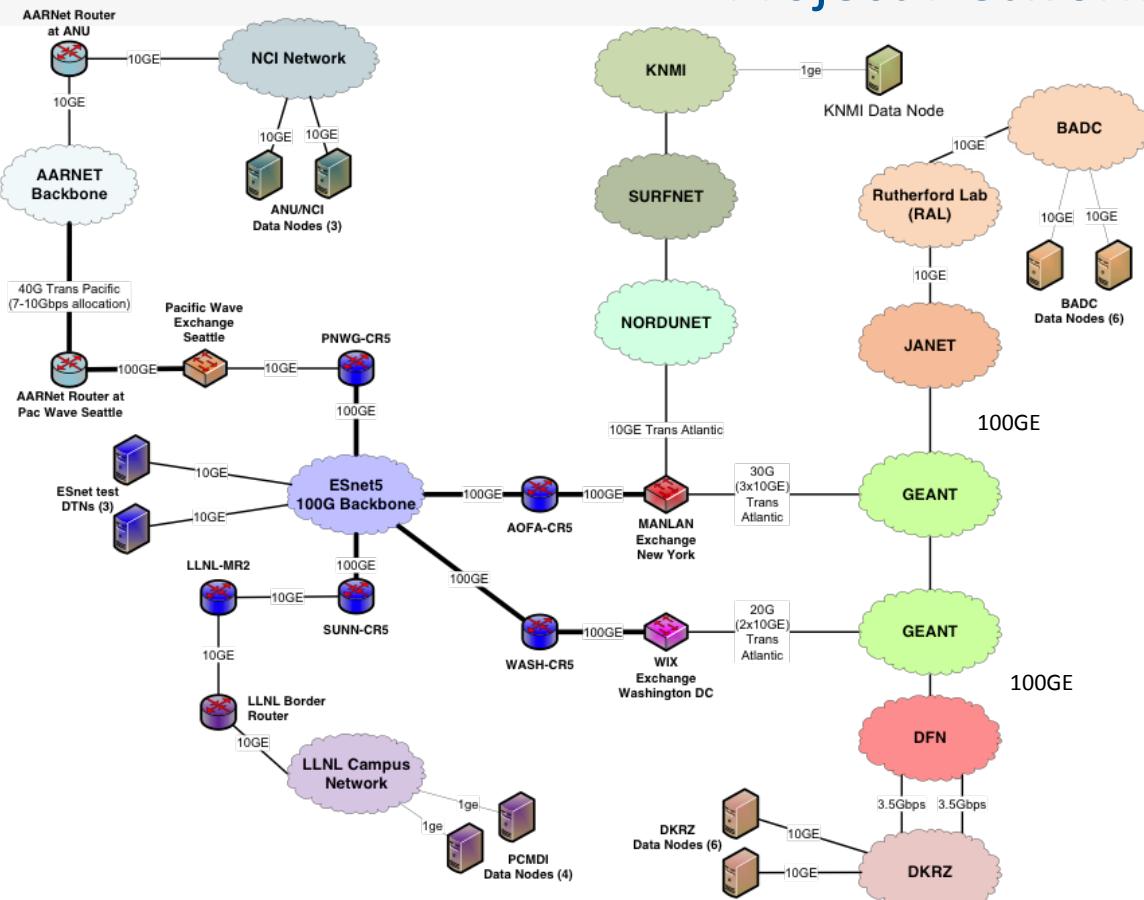
ICNWG: Overlap between ESGF and EYR Global Program



Location of International Sites



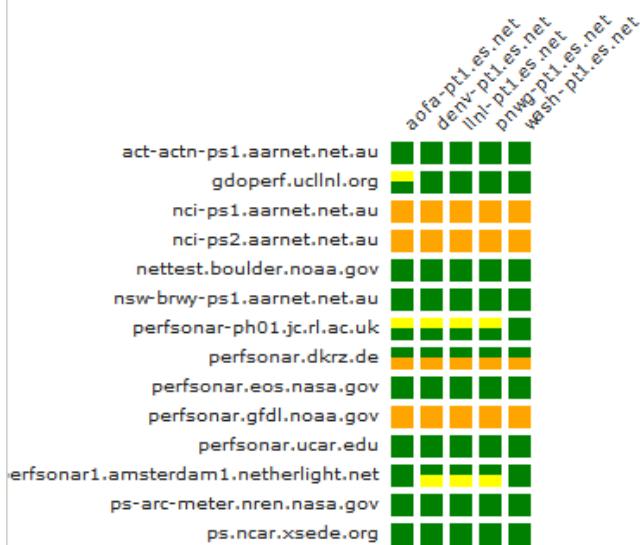
Project Network Map



ESnet - ESnet to ICNWG Site Throughput Testing

█ Throughput >= 500Mbps
 █ Throughput < 500Mbps
 █ Throughput <= 100Mbps
 █ Unable to retrieve data
 █ Check has not yet run

Status: Feb. 19, 2015, 16:45



Milestones and Timeline

Below is the original timeline for achieving the ICNWG's goals for each site at AIMS, CEDA, DKRZ, NCI, and KNMI. Red notes the revised timeframe for achieving the working group's the goals.

March 2014 - September 2014

- Deploy 10G perfSONAR test server
- Deploy 10G data server
- Set up perfSONAR tests

May 2014 July - December 2014

- Filesystem tests for 10G data servers – target 500MB/sec
- Achieve 500MB/sec (4Gbps) network test throughput between perfSONAR test servers

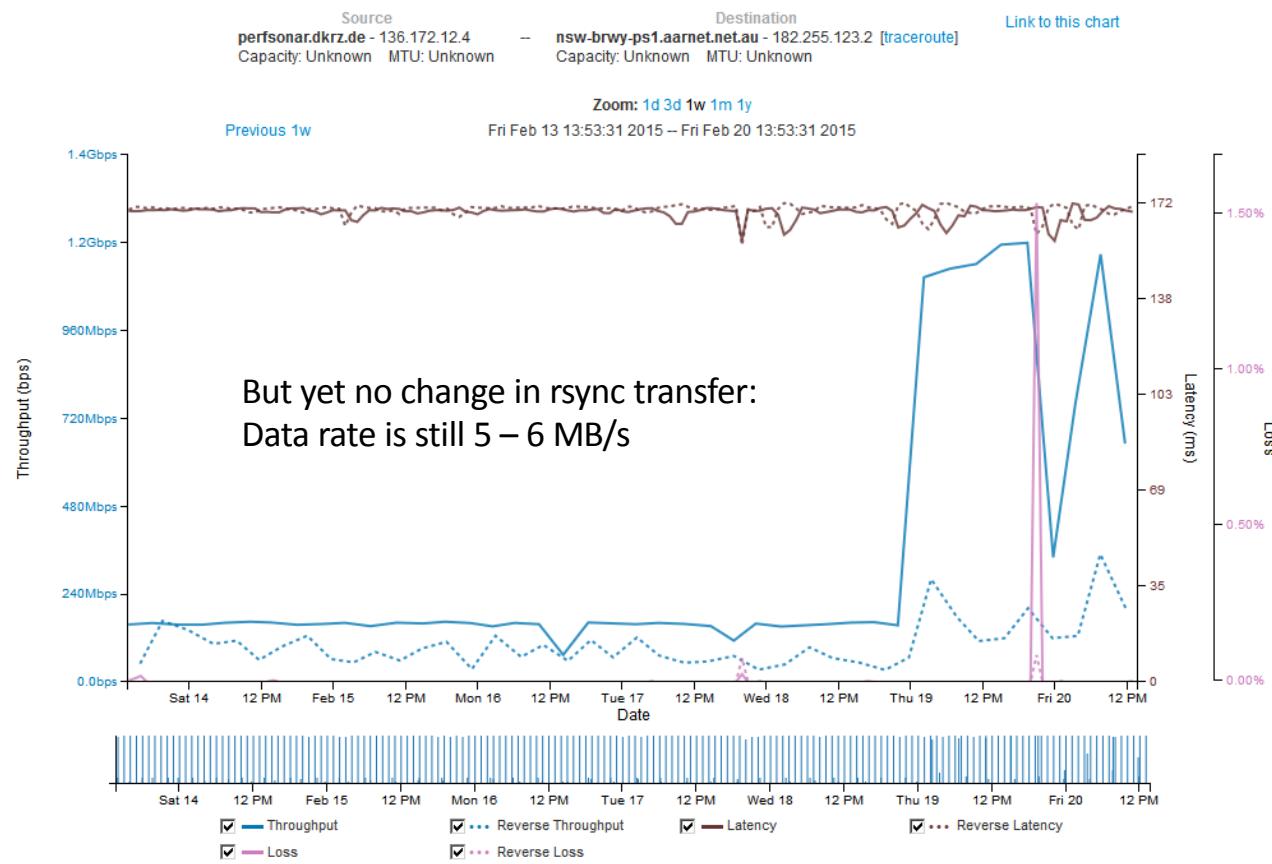
August 2014 January - February 2015

- 500MB/sec (4Gbps) disk to disk transfers between data servers

CMIP5 Data Replication between DKRZ and ANU

- ANU to DKRZ
 - ANU has a new version of CSIRO CMIP5 data to be stored in the reference data archive at WDCC/DKRZ
 - Amount of data: about 25 TB
- DKRZ to ANU
 - Similar amount of EURO-CORDEX data
- Test ANU to DKRZ
 - December/January: test and stabilize network connection
 - January/February: data transfer optimization with 50 GB test data with SSH/rsync transfer and CentOS 6
 - rsync session shows between 5.3 and 5.6 MB/s (which is 10 % of the ICNWG milestone)
 - 4 parallel streams are most likely
 - Data transfer time is then 55 days single stream without interrupts and 14 days with 4 parallel streams
- Real data transfer has not started yet.

Recent result: 1 GE Throughput from ANU to DKRZ



More Information

ICNWG

International
Climate Network
Working Group



- Webpage (<http://icnwg.llnl.gov/>) provide information on participants, network dashboard and project status
- Information describing ICNWG can be obtained from the ESGF & UV-CDAT F2F Conference report:
http://aims-group.github.io/pdf/2014-ESGF_UV-CDAT_Conference_Report.pdf